UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,861	12/11/2003	Frederic Hayem	RONI-019/01US	8099

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EXAMINER
CASCA, FRED A

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/733,861	HAYEM ET AL.
	Examiner	Art Unit	
	Fred A. Casca	2687	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-9 and 12-26* is/are rejected.
7) ☒ Claim(s) *10-11* is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *11 December 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Claim Objections

1.   Claim 26 is objected to because it depends on an improper claim. In claim 26, line 1,

please insert -- 23 -- and delete "19" therefore.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-7, 12-19, 22-23, and 26 rejected under 35 U.S.C. 103(a) as being unpatentable

over Neumann et al (U.S. Pub. No. 2002/0141441 A1), in view of Schmidt (US Pub. No.

2003/0067894 A1).

Referring to claim 1, Neumann discloses a multi-mode wireless communication device

(abstract, and paragraph 0004, "dual mode", telephone have been developed, in which the

telephone is useable in two networks), comprising a first baseband co-processor configured to

execute wireless communications protocol employed within a first wireless communications

network (figures 2-8B, paragraphs 0019-0021, "first and second baseband processors",

"GSM","TDMA"); a host baseband processor configured to execute a set of protocol stack

operations of a second wireless communications protocol employed within a second wireless

communications network and higher-level stack operations of said first wireless communications

protocol (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second

baseband processors", "GSM","TDMA"), and a data communication channel between said host

baseband processor and said first baseband co-processor capable of carrying data received by

said multi-mode wireless communication device from said first wireless communications

network or sent by said multi-mode wireless communication device through said first wireless

communications network (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "logic

interface unit for voice data during a voice call couples the GSM master processor to the TDMA

co-processor").

Neumann does not specifically disclose baseband co-processor configured to execute

low-level stack operations of a first wireless communications protocol.

Schmidt discloses baseband co-processor configured to execute **low-level stack**

operations of a first wireless communications protocol (Figures 1A-2, abstract, paragraphs

0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51, "TCP/IP", "HTML", "HTTP",

"processor 220", "short-range wireless transceiver").

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the device of Neumann, by incorporating the teachings of Schmidt into that

of Neumann, and consequently providing the co-processor configured to execute low-level stack

operations of a first wireless communications protocol, motivation being to distribute the stack

operations of the protocols between processors, and consequently providing efficiency and faster

execution of operations.

Referring to claim 2, the combination of Neumann/Schmidt disclose the device of claim

1, and further disclose the set of protocol stack operations comprises a complete set of protocol

stack operations of said second wireless communications protocol (Neumann, figures 2-8B,

paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second baseband processors",

"GSM","TDMA").

Referring to claim 3, the combination of Neumann/Schmidt disclose the device of claim

1.

Neumann does not disclose a second baseband processor in communication with said

host baseband processor via said data communication channel, said second baseband processor

being configured to execute low-level stack operations of said second wireless communications

protocol.

Schmidt discloses second baseband processor in communication with a host baseband

processor via a data communication channel, said second baseband processor being configured

to execute low-level stack operations of said second wireless communications protocol (Figures

1A-2, abstract, paragraphs 0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the device of Neumann, by incorporating the teachings of Schmidt into that

of Neumann, motivation being to distribute the stack operations of the protocols between

processors, and consequently providing efficiency and faster execution of operations.

Referring to claim 4, the combination of Neumann/Schmidt disclose the device of claim

3, and further disclose the set of protocol stack operations comprises higher-level protocol stack

operations of said second wireless communications protocol (Neumann, figures 2-8B, paragraphs

0019-0021, 0038, 0034, 0030, 0025, "logic interface unit for voice data during a voice call

couples the GSM master processor to the TDMA co-processor").

Referring to claim 5, the combination of Neumann/Schmidt disclose the device of claim 1, and further disclose the low-level stack operations include physical layer functions and bearer-specific stack functions peculiar to said first wireless communications protocol (Schmidt, figures 1A-2, abstract, paragraphs 4, 10-11, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51).

Referring to claim 6, the combination of Neumann/Schmidt disclose the device of claim 5, and further disclose higher-level stack functions include stack functions common to said first and second wireless communication protocols (Neumann, figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025).

Referring to claim 7, the combination of Neumann/Schmidt disclose the device of claim 1, and further disclose host baseband processor is further configured to execute application-layer functions (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025).

Referring to claim 12, the combination of Neumann/Schmidt disclose the device of claim 1, and further disclose first wireless communications protocol comprises WCDMA and said second wireless communications protocol comprises GSM (Schmidt, abstract, and paragraphs 4, and 25).

Referring to claim 13. Neumann discloses a method performed in a wireless communication device disposed for communication with first and second wireless communications networks in accordance with first and second wireless communication protocols, respectively (abstract, and paragraph 0004, and 19-20"dual mode", telephone have been developed, in which the telephone is useable in two networks), said method comprising executing of said first wireless communications protocol within a first baseband co-processor (figures 2-8B, paragraphs 0019-0021, "first and second baseband processors",

"GSM","TDMA"); executing a set of protocol stack operations of a second wireless communications protocol and higher-level stack operations of said first wireless communications protocol within a host baseband processor (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second baseband processors", "GSM","TDMA"); and establishing a data communication channel between said host baseband processor and said first baseband co-processor capable of carrying data received by said wireless communication device from said first wireless communications network or sent by said wireless communication device through said first wireless communications network (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "logic interface unit for voice data during a voice call couples the GSM master processor to the TDMA co-processor").

Neumann does not specifically disclose executing **low-level stack operations** of said first wireless communications protocol within a first baseband co-processor.

Schmidt discloses baseband co-processor configured to execute **low-level stack operations of a first** wireless communications protocol (Figures 1A-2, abstract, paragraphs 0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51, "TCP/IP", "HTML", "HTTP", "processor 220", "short-range wireless transceiver").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the method of Neumann, by incorporating the teachings of Schmidt into that of Neumann, and consequently providing executing **low-level stack operations** of said first wireless communications protocol within a first baseband co-processor, motivation being to distribute the stack operations of the protocols between processors, and consequently providing efficiency and faster execution of operations.

Referring to claim 14, the combination of Neumann/Schmidt disclose the method of claim 13, and further disclose executing said set of protocol stack operations comprise executing a complete set of protocol stack operations of said second wireless communications protocol (Neumann, figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second baseband processors", "GSM","TDMA").

Referring to claim 15, the combination of Neumann/Schmidt disclose the method of claim 13.

Neumann does not disclose a second baseband processor in communication with said host baseband processor via said data communication channel, said second baseband processor being configured to execute low-level stack operations of said second wireless communications protocol.

Schmidt discloses second baseband processor in communication with a host baseband processor via a data communication channel, said second baseband processor being configured to execute low-level stack operations of said second wireless communications protocol (Figures 1A-2, abstract, paragraphs 0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the method of Neumann, by incorporating the teachings of Schmidt into that of Neumann, motivation being to distribute the stack operations of the protocols between processors, and consequently providing efficiency and faster execution of operations.

Referring to claim 16, the combination of Neumann/Schmidt disclose the method of claim 15, and further disclose executing said set of protocol stack operations comprises executing higher-level protocol stack operations of said second wireless communications

protocol (Neumann, figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "logic interface unit for voice data during a voice call couples the GSM master processor to the TDMA co-processor").

Referring to claim 17, the combination of Neumann/Schmidt disclose the method of claim 13, and further disclose executing said low-level stack operations comprises executing physical layer functions and bearer-specific stack functions peculiar to said first wireless communications protocol (Schmidt, figures 1A-2, abstract, paragraphs 4, 10-11, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51).

Referring to claim 18, the combination of Neumann/Schmidt disclose the method of claim 17, and further disclose executing higher-level stack functions includes executing stack functions common to said first and second wireless communication protocols (Neumann, figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025).

Referring to claim 19, Neumann disclose a multi-mode wireless communication device (abstract, and paragraph 0004, "dual mode", telephone have been developed, in which the telephone is useable in two networks), comprising a first bearer-specific processor configured to execute of a first wireless communications protocol employed within a first wireless, communications network (figures 2-8B, paragraphs 0019-0021, "first and second baseband processors", "GSM","TDMA", note that a baseband co-processor is a bearer-specific processor); a second bearer-specific processor configured to execute operations of a second, wireless communications protocol employed within a second wireless communications network (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second baseband processors", "GSM","TDMA", note that a baseband processor is a bearer-specific processor); a primary

processor configured to execute higher-level stack operations common to said first and second

wireless communications protocols (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030,

0025, "first and second baseband processors", "GSM","TDMA", note that the second baseband

processor that is a second bearer-specific processor also is the primary processor); a radio

transceiver (Figures 1-8); and means for communicating data between the radio transceiver, the

primary processor, the first bearer-specific processor and the second bearer-specific processor

(figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "logic interface unit for voice

data during a voice call couples the GSM master processor to the TDMA co-processor").

Neumann does not specifically disclose **low-level stack operations.**

Schmidt discloses baseband co-processor configured to execute **low-level stack**

operations of a first wireless communications protocol (Figures 1A-2, abstract, paragraphs

0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51, "TCP/IP", "HTML", "HTTP",

"processor 220", "short-range wireless transceiver").

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the device of Neumann, by incorporating the teachings of Schmidt into that

of Neumann, and consequently providing a first bearer-specific processor configured to execute

low-level stack operations of a first wireless communications protocol employed within a first

wireless, communications network; a second bearer-specific processor configured to execute

low-level stack operations of a second, wireless communications protocol employed within a

second wireless communications network, motivation being to distribute the stack operations of

the protocols between processors, and consequently providing efficiency and faster execution of

operations.

Referring to claim 23, Neumann discloses a multi-mode wireless communication device (abstract, and paragraph 0004, "dual mode", telephone have been developed, in which the telephone is useable in two networks), comprising a first integrated circuit configured to execute operations of a first wireless communications protocol employed within a first wireless communications network (figures 2-8B, paragraphs 0019-0021, "first and second baseband processors", "GSM","TDMA"); a second integrated circuit configured to execute operations of a second wireless communications protocol employed within a second wireless communications network (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second baseband processors", "GSM","TDMA"); a integrated circuit configured to execute higher-level stack operations of said first wireless communications protocol and of said second wireless communications protocol (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "first and second baseband processors", "GSM","TDMA"); a first data communications channel between integrated circuits (figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025, "logic interface unit for voice data during a voice call couples the GSM master processor to the TDMA co-processor"); a second data communications channel between said **second** integrated circuit and said **third** integrated circuit.

Neumann does not specifically disclose a circuit configured to execute **low-level stack** operations, a **third** integrated circuit, and a first data communications channel between said **first** integrated circuit and said **third** integrated circuit; and a second data communications channel between said **second** integrated circuit and said **third** integrated circuit.

Schmidt discloses a circuit configured to execute **low-level stack** operations, a **third** integrated circuit, and a first data communications channel between said **first** integrated circuit

and the **third** integrated circuit; and a second data communications channel between the **second** integrated circuit and the **third** integrated circuit (Figures 1A-2, abstract, paragraphs 0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51, "TCP/IP", "HTML", "HTTP", "processor 220", "short-range wireless transceiver", "DSP Processor 310", "320", "330").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the device of Neumann, by incorporating the teachings of Schmidt into that of Neumann, and consequently providing a circuit configured to execute **low-level stack** operations of a first wireless communications protocol employed within a first wireless communications network; a second integrated circuit configured to execute **low-level stack** operations of a second wireless communications protocol employed within a second wireless communications network; a **third** integrated circuit configured to execute higher-level stack operations of said first wireless communications protocol and of said second wireless communications protocol; a first data communications channel between said **first** integrated circuit and said **third** integrated circuit; and a second data communications channel between said **second** integrated circuit and said **third** integrated circuit, motivation being for the purpose of distributing the stack operations of the protocols between processors, and consequently providing efficiency and faster execution of operations.

Referring to claim 22, the combination of Neumann/Schmidt disclose device of claims 19, and further disclose primary processor and the is further configured to execute application-layer functions (Neumann, figures 2-8B, paragraphs 0019-0021, 0038, 0034, 0030, 0025).

Referring to claim 26, the combination of Neumann/Schmidt disclose device of claim 23, and further disclose third integrated circuit is further configured to execute application-layer

functions (Schmidt, figures 1A-2, abstract, paragraphs 4, 10-11, 23-25, 27-29, 31, 35, 40, 44-46,

49, and 51).

4.   Claims 8-9, 20-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Neumann et al (U.S. Pub. No. 2002/0141441 A1), in view of Schmidt (US Pub. No.

2003/0067894 A1), and further in view of well known prior art (MPEP 2144.03).

      Referring to claim 8, the combination of Neumann/Schmidt disclose the device of claim

1, and further disclose the first baseband co-processor includes a first physical layer module for

implementing physical layer functions (Schmidt, 1A-2, abstract, paragraphs 4, 10-11, 23-25, 27-

29, 31, 35, 40, 44-46, 49, and 51, note that a first layer module is an inherent part of lower level

stacks).

      The combination of Neumann/Schmidt does not specifically disclose **a first bearer-**

specific module for implementing bearer-specific stack functions peculiar to said first

wireless communications protocol a first buffer in communication with said first physical layer

module and said first bearer-specific module.

The examiner takes official notice of the fact that bearer-specific modules and algorithms, and

buffers in communication with the physical layers module of communication protocols are well

known in the art.

      It would have been obvious to one of the ordinary skills in the art at the time of the

invention to modify the device of Neumann/Schmidt by incorporating the teachings of prior art

and consequently providing a first bearer-specific module for implementing bearer-specific stack

functions to be peculiar to the first wireless communications **protocol** a first buffer in

communication with said first physical layer module and said first bearer-specific module, for

the purpose of having a task specific module, and increasing efficiency.

Referring to claim 9, the combination of Neumann/Schmidt disclose the device of claim

8.

The combination of Neumann/Schmidt does not disclose first baseband co-processor

includes a second buffer in communication with first bearer-specific module and said data

communication channel.

The examiner takes official notice of the fact that bearer-specific modules and

algorithms, and second buffers in communication with the physical layers module of

communication protocols are well known in the art.

It would have been obvious to one of the ordinary skills in the art at the time of the

invention to modify the device of Neumann/Schmidt by incorporating the teachings of prior art

and consequently providing the first baseband co-processor to include a second buffer in

communication with first bearer-specific module and data communication channel, for the

purpose of having a task specific module, and increasing efficiency.

Referring to claim 20, and 24, the combination of Neumann/Schmidt disclose the device

of claims 19, and 23.

The combination of Neumann/Schmidt does not disclose low-level stack operations of

said first wireless communications protocol include physical layer functions and bearer-specific

stack functions peculiar to said first wireless communications protocol.

The examiner takes official notice of the fact that low-level stack operations and bearer-

specific stack operations are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention

to modify the device of Neumann/Schmidt by incorporating the teachings of prior art for the

purpose of efficient distribution of stack operations of the protocols between processors, and

consequently providing efficient executions.

Referring to claims 21 and 25, the combination of Neumann/Schmidt disclose the device

of claim 20 and 24.

-- The combination of Neumann/Schmidt does not disclose low-level stack operations of

the second wireless communications protocol include physical layer functions and bearer-

specific stack functions peculiar to the second wireless communications protocol.

The examiner takes official notice of the fact that low-level stack operations and bearer-

specific stack operations are well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time of invention

to modify the device of Neumann/Schmidt by incorporating the teachings of prior art for the

purpose of efficient distribution of stack operations of the protocols between processors, and

consequently providing efficient executions.

Allowable Subject Matter

5.   Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Carlberg et al US Pub. No. 2003/0039256 A1 discloses distribution of connection handling in a processor cluster.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid, can be reached at (571) 272-7922. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER